

AMENDMENTS TO THE SPECIFICATION

Please replace the last paragraph on page 1 continuing onto page 2 with the following amended paragraph.

~~Hitherto~~Conventionally, ~~to produce a printed matter of a color image print is produced by, there is used a halftone dot producing apparatus in which the reading in a color image is read by a color scanner; and editing the color image thus read is edited (page make-up); reading in~~ multi-tone level image data of color plates ~~(of e.g., yellow (Y), magenta (M), cyan (C) and black (K)) that are representative of an the image completed by the page make-up; are read in, and producing halftone dot image data of YMCK color plates according to the multi-tone level image data of those color plates are produced. And the halftone dot image data are produced by the by using a halftone dot producing apparatus; producing plate making films for the color plates carrying the halftone dot images of YMCK color plates according to the halftone dot image data of the color plates; are produced, printing of printing plates for the color plates is performed by using the plate making films; and finally, a predetermined printing machine is used to printprinting,~~ on a predetermined medium, a color image in which the halftone dot images of the YMCK color plates are superposed on one another, using those printing plates with a predetermined printing machine.

Please replace the first full paragraph on page 2 with the following amended paragraph.

Generally, ~~a~~as described above, the printing of the color image is on a large scale ~~as mentioned above.~~ Thus, an operator, who takes part in producing ~~a the color image print printed~~

~~matter~~, uses a proofer ~~for simply reproducing~~ to produce a simple image (proof) of the color image before the final printing, and ~~confirms a finish~~ verifies the quality of the ~~finally final~~ printed color image by referring to a ~~the~~ proof image outputted from a printer in accordance with the proofer.

Please replace the last paragraph on page 2 continuing onto page 3 with the following amended paragraph.

The halftone dot images of the YMCK color plates, which constitute the color images, are composed of screens of halftone dots arranged with slopes of angles 0°, 15°, 45° and 75°, for example, respectively. In those halftone dot images, a gradation of the image is represented by an area modulation for the individual halftone dot. ~~Incidentally, an~~ An arrangement of the halftone dots in the halftone dot images is defined by the number of lines representative of the density of the lines consisting of columns of halftone dots other than the above-mentioned angles. The color image, ~~wherein those~~ in which the halftone dot images are superposed on one another, is associated with a Rosette pattern that is peculiar to the printed image ~~owing to~~ because of the superimposition of the MCK plates ~~excepting (the Y plate is excluded because of its light concerned with a thin color).~~

Please replace the first full paragraph on page 3 with the following amended paragraph.

The ~~condition of an occurrence of~~ conditions that produce a Rosette pattern is ~~have~~ previously been analyzed from long ago. For example, as explained in Japanese Patent Application Laid Open Gazette Hei. 2-58176, a Rosette pattern is formed by setting up the number of lines of the halftone and the angles in such a manner that a row of the halftone dots of the screen is grasped as a wave and ~~it is prevented that a secondary moiré is prevented from occurring because of the occurs owing to overlapping of a primary moiré,~~ produced by the overlapping of a screen of an angle 15° and a screen of an angle 75° , and a screen of an angle 45° , ~~in other words,~~ That is, the primary moiré and a wave number component of the screen of the angle 45° are coincident with one another.

Please replace the second full paragraph on page 3 with the following amended paragraph.

A combination of the angles of the halftone dots used in a print, is generally 15° , 45° and 75° . It is important that a relative angle between those angles is at intervals of 30 degrees, and it is noted that the combination is not restricted to the angles as mentioned above. For example, it is known that a Rosette pattern also occurs ~~also~~ in a combination of 22.5° , 52.5° and 82.5° , ~~for example.~~ Incidentally, generally ~~Generally~~, the halftone dots are arranged as a tetragonal lattice, and thus it is arranged in angles added with $\pm 90^\circ$ or 180° . Accordingly, it happens that the angles of the halftone dots are referred to in angles added with $\pm 90^\circ$ or 180° .

Please replace the last paragraph on page 4 continuing onto page 5 with the following amended paragraph.

It is known that A clear-centered Rosette pattern of the clear-center and dot-centered Rosette pattern of the dot-center changes may be changed therebetween by shifting, of three screens constituting those patterns, a superimposing position of one screen with respect to other screens, for example. ~~Actually, there is one capable of optionally selecting in~~ In accordance with an image, ~~between a selection between a clear-centered Rosette pattern of the clear-center and a dot-centered Rosette pattern of the dot-center can be made~~ with respect to a set of halftone dot image data of YMCK color plates on RIP (Raster Image Processor) for developing information of characters and images into a bit map, which is connected to a film setter ~~outputting that~~ outputs the plate making film. ~~Such a~~ The difference between the Rosette patterns is caused by a difference in the superpositioning way of superposition of halftone dots of the screens by the deviation of a superimposing position of the above-mentioned three screens. Hereinafter, positions of the above-mentioned three screens constituting a clear-centered Rosette pattern of the clear-center, for example, are defined as reference positions, and the positions ~~position~~ of the three screens ~~looking from~~ with respect to the reference positions are referred to as phases of the halftone dots on the screens, respectively.

Please replace the first full paragraph on page 5 with the following amended paragraph.

However, in various steps of the conventional color image ~~printed-matter~~ ~~producing~~printing method, as ~~mentioned~~described above, there ~~occurs~~ a register discrepancy can occur in which positions of the color plates are deviated. For example, even if halftone dot image data is related to a Rosette pattern representative of the clear center or the dot center, ~~in the actual printed matter, it does not always happen that the expected clear-centered Rosette pattern of the clear center or the expected dot-centered Rosette pattern of the dot center does not~~ appear.

Please replace the last paragraph on page 5 continuing onto page 6 with the following amended paragraph.

A Rosette pattern is preferable in ~~meaning the sense that the~~ occurrence of the secondary moiré is suppressed. However, ~~in the event that if the~~ Rosette pattern is clearly generated as shown in Figs. 25 and 26, ~~it the Rosette pattern~~ is visible to the naked eye, and thus, ~~it the Rosette pattern~~ is not preferable on an ~~image~~the basis of image quality. Hereinafter, a Rosette pattern, which is not preferable on an ~~image~~the basis of image quality, such as the clear-centered Rosette pattern of the clear center or dot-centered Rosette pattern of the dot center as ~~mentioned~~described above, is referred to as a Rosette moiré. ~~Incidentally, in~~ In various steps of the conventional color image ~~printed-matter~~ ~~producing~~printing, as ~~mentioned~~described above, a register discrepancy is generated. Thus, in the actual ~~printed-matter~~print, a Rosette moiré ~~occurs~~

~~will occur if in the event that~~ a phase between the color plates due to the register discrepancy is near a phase implementing a clear-centered Rosette pattern of the clear-center and a dot-centered Rosette pattern of the dot-center as mentioned described above.

Please replace the first full paragraph on page 6 with the following amended paragraph.

As a method of suppressing the Rosette moiré, Japanese Patent Application Laid Open Gazette Hei. 2-134635 proposes a method in which a phase of halftone dot of one color plate is shifted to ~~be a just an~~ an intermediate phase between a phase implementing the clear-center-clear-centered Rosette pattern and a phase implementing the dot-center-dot-centered Rosette pattern. This intermediate phase is far from ~~any of the phases implementing~~ the clear-centered Rosette pattern of the clear-center and the dot-centered Rosette pattern of the dot-center. Thus, this method makes it possible to suppress the occurrence of ~~the Rosette moiré in the event that~~ cases where the register discrepancy of the color plate in the various steps of the conventional color image printed-matter producing printing is small.

Please replace the last paragraph on page 6 continuing onto page 7 with the following amended paragraph.

~~However, recently, a~~ Recently, advances in the digitalization in a of the printing process advances, and digitization of the a-page make-up of page data is digitized has improved register accuracy so that a register the registration of the color plates at the time of the page make-up is

~~has improved in a register accuracy.~~ Further, ~~in printing, according to an~~ CTP (Computer To Plate) ~~printing, wherein where~~ digital data is directly written ~~into onto~~ a printing plate and ~~a in~~ CTC (Computer To Cylinder) ~~printing, where wherein~~ digital data is directly written ~~into onto~~ a printing plate on a cylinder of a printing machine, ~~a the registering register~~ of the position of the color plates at the time of the page make-up is implemented with ~~great greater~~ accuracy. For this reason, ~~in the even that particularly if~~ no phase control of halftone dots of the color plates is performed, there is a tendency that ~~a~~ Rosette moiré, which ~~is was~~ not ~~conspicuous obvious until now because of~~ owing to a register discrepancy ~~hitherto~~, appears on ~~an the printed image of the printed matter and~~ it is visible to the naked eye. The occurrence of the Rosette moiré can be suppressed in accordance with the above-~~mentioned~~ described method in which a phase of halftone dot of one color plate is shifted to be ~~a just an~~ intermediate phase between a phase implementing the ~~clear center clear-centered~~ clear-centered Rosette pattern and a phase implementing the ~~dot center dot-centered~~ dot-centered Rosette pattern, and the intermediate phase is far from any of the phases implementing the clear-centered Rosette pattern of the clear center and the dot-centered Rosette pattern of the dot center. However, in a situation ~~that the where~~ great accuracy in register ~~registering has been~~ is implemented, as ~~mentioned described~~ above, it is ~~desired desirable~~ that the phase is freely changed so that the Rosette pattern is altered in accordance with the user's request, without ~~needs the need to fix of fixing~~ of the phase onto the above-mentioned intermediate phase in order to avoid the Rosette moiré.

Please replace the last paragraph on page 7 continuing onto page 8 with the following amended paragraph.

In the processes of ~~printed-matter producing~~printing using ~~the~~a film setter according to the prior art, it often happens that ~~the~~a register discrepancy occurs in ~~when~~ producing the plate making film and the printing of the printing plate, and thus, in some ~~ease~~cases, it happens that ~~the~~Rosette moiré is not generated on the ~~finally obtained printed-matter~~final print. However, ~~generally~~, a proofer ~~generally plots position with great accuracy~~is great in accuracy of repetition of a ~~plotting position~~, and particularly, ~~if~~a phase control for halftone dots of the color plates is not performed, a Rosette moiré appears on the outputted proof image. Although the proof image is produced in approximation of the final image print, Generation-generation of such a Rosette moiré will bring about a ~~the~~possibility that the proof image is different in impression from the ~~final image print, of the actual printed matter, although the proof image is produced in approximation to an image of a printed matter.~~ For this reason, it is ~~desired~~desirable to enhance a reproducibility of the proof image ~~as to an image of a printed matter~~with respect to an image print by means of controlling a phase of halftone dots in at least one color plate of the color plates constituting a proof image in accordance with a degree of a register discrepancy of the ~~image of the printed-matter~~print.

Please replace the last paragraph on page 27 (bridging page 28) with the following amended paragraph:

Figs. 6A-6B ~~isare a view~~views useful for understanding a halftone dot producing program storage medium according to an embodiment of the present invention.

Please replace the second full paragraph on page 28 with the following amended paragraph:

A halftone dot producing program 50 stored in the CD-ROM 105 shown in part (A) of Fig. 6A includes, as a software, multi-tone level image data obtaining means 51, uniform image producing means 52, shape-line number-angle selection means 53, dot area percentage selection means 54, phase selection means 55, threshold table group 56, halftone dot image data output means 57, C-data conversion means 60, M-data conversion means 70, Y-data conversion means 80, and K-data conversion means 90. It is acceptable that those CMYK colors of data conversion means are replaced by a single data conversion means. The threshold table group 56 is a group of threshold tables involved in threshold data. The threshold table corresponds to the threshold matrix referred to in the present invention.

Please replace the last paragraph on page 28 (bridging page 29) with the following amended paragraph:

As shown in part (B) of Fig. 6B, the C-data conversion means 60 includes threshold table selection means 61, dot area percentage control means 61-1 included in the threshold table

selection means 61, threshold table conversion means 67, image pixel position deriving means 63, threshold pixel position set up means 64, threshold set up means 65, and comparison means 66. While Figs. 6A-6B ~~shows~~ show the threshold table conversion means 67, a halftone dot producing program, wherein the C-data conversion means 60 does not include the threshold table conversion means 67, is also one of the halftone dot producing programs according to the embodiment of the present invention. Further, according to the present embodiment, the M-data conversion means 70, the Y-data conversion means 80, the K-data conversion means 90 include the whole means included in the C-data conversion means 60, except for the threshold table conversion means 67. However, in the event that the phase control of the halftone dot is performed by the YMK colors data conversion means, it is acceptable that the YMK colors data conversion means include the threshold table conversion means 67.

Please replace the first full paragraph on page 37 (bridging page 38) with the following amended paragraph:

The M-data conversion section 20 shown in Fig. 8 comprises: a threshold table storage section 22, which is equivalent to the hard disk 120 storing the threshold table group in the CD-ROM 105 shown in Fig. 6A; a threshold table selection section 21 for selecting a threshold table from the threshold table storage section 22, said threshold table selection section 21 including dot area percentage control means 21-1; an image pixel position deriving section 23; a threshold pixel position setting section 24; a threshold setting section 25; and a comparison section 26. The image pixel position deriving section 23, the threshold pixel position setting section 24, the

threshold setting section 25, and the comparison section 26 are for converting multi-tone level image data $\{G(i, j)\}$ into halftone dot image data $\{D(i, j)\}$ using the selected threshold table by the threshold table selection section 21. The threshold table selection section 21, and those sections 23, 24, 25 and 26 for converting multi-tone level image data $\{G(i, j)\}$ into halftone dot image data $\{D(i, j)\}$ are operated in accordance with the flowchart shown in Fig. 9.